

ABSTRACT OF THE DISCLOSURE

A laser scanning system including a multi-path scan data signal processor having multiple signal processing paths. Each signal processing path processes the same data signal (which is derived from the output of a photodetector) to detect bar code symbols therein and generate data representing the bar code symbols. And each signal processing path has different operational characteristics (such as low-pass filter cutoff frequencies, amplifier gain characteristics, and/or positive and negative signal thresholds). The varying operational characteristics of the signal processing paths are optimized to provide different signal processing functions (e.g., minimize paper noise, or maximize the scan resolution of the system). The data signal derived from laser scanning is supplied to each path of the multi-path scan data processor, where it is processed (preferably in parallel) to identify signal level transitions therein. A digital scan data signal that encodes such signal level transitions is provided to digitizing circuitry, which converts the digital scan data signal into a corresponding sequence of digital words (i.e., a sequence of digital count values) suitable for bar code symbol decoding.

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